

## Maintaining the Cold Chain During Transport

When transporting vaccines, think about how each vaccine was packed when you first received it from the manufacturer or distributor. Use this as a model for how to repack the individual vaccines in order to transport them at their appropriate temperature. Keep a temperature log. Record the temperature during transport and periodically (e.g., at least once each hour) during the entire time the vaccine is kept in the transport container to ensure it remains within the recommended range.

	Vaccines	Special Instructions
Inactivated vaccines	<ul style="list-style-type: none"> <li>• Diphtheria-tetanus-pertussis (DTaP, DT, Tdap, Td)</li> <li>• <i>Haemophilus influenzae</i> type b</li> <li>• Human papillomavirus</li> <li>• Hepatitis A</li> <li>• Hepatitis B</li> <li>• Influenza, inactivated</li> <li>• Meningococcal</li> <li>• Pneumococcal</li> <li>• Poliovirus, inactivated</li> <li>• Combination products of these vaccines</li> </ul>	<ul style="list-style-type: none"> <li>• Keep cold at 35–46°F (2–8°C) and do not freeze.</li> <li>• Use refrigerated or frozen packs depending on the time of the year and the situation (e.g., frozen packs for hot weather while transporting outdoors, refrigerated packs for cold weather).</li> <li>• Make sure vaccines are kept in their original boxes. Place some insulation (e.g., crumpled paper, bubble wrap) between the vaccine boxes and the refrigerated or frozen packs to prevent the inactivated vaccine from directly touching the refrigerated or frozen packs. Put crushed paper in the cooler to keep the vaccines from shifting during transport.</li> <li>• During hot weather, keep the insulated container in a cool place (air-conditioned interior of car). Do not leave the vaccine container unattended or in the trunk of a parked car. During cold weather, do not leave the container in an unheated area because vaccine must not freeze. In cold weather, include a freeze indicator in the vaccine container.</li> </ul>
Live virus vaccines	<ul style="list-style-type: none"> <li>• Measles, mumps, rubella (MMR)</li> <li>• Rotavirus</li> </ul>	<ul style="list-style-type: none"> <li>• Keep cold at 35–46°F (2–8°C). MMR may be frozen.</li> <li>• If MMR is transported with inactivated vaccines, follow the packing instructions for inactivated vaccines indicated above.</li> <li>• If you are transporting diluent in the same cooler with the MMR, refrigerate the diluent in advance to help maintain the cold temperature in the cooler.</li> </ul>
	<ul style="list-style-type: none"> <li>• Varicella (VAR)</li> <li>• MMR+VAR (MMRV)</li> <li>• Zoster (shingles)</li> </ul>	<p>Transport only the quantity needed in a special freezer unit or in an insulated container with dry ice; clearly mark the vaccine with the date and time it was removed from the original freezer unit. It is extremely important to include a thermometer in the container with the vaccine. If using dry ice, pack the container with enough to ensure the temperature is maintained at 5°F (-15°C) or colder. If dry ice is not available, you may transport VAR (not MMRV or zoster) with frozen packs. If the temperature within the container exceeds 5°F (-15°C) but doesn't go above 46°F (8°C), the expiration date of the VAR vaccine is reduced to 72 hours. VAR vaccine that has reached temperatures above 46°F (8°C) or has exceeded the 72 hour limit cannot be used. <b>Note: MMRV and zoster vaccines must always be transported with dry ice or in a special freezer unit that can reliably maintain temperatures of 5°F (-15°C) or colder. For this reason, transport of MMRV or zoster to off-site clinics is not advised.</b></p>
	<ul style="list-style-type: none"> <li>• Influenza, live</li> </ul>	<p>For information on transporting live, attenuated intranasal influenza vaccine (FluMist®), refer to the package insert.</p>

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[www.immunize.org/catg.d/p3049.pdf](http://www.immunize.org/catg.d/p3049.pdf) • Item #P3049 (11/06)

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**Defense Logistics Agency Regulation (DLAR) 4145.21**  
Department of Army Technical Bulletin (TB) MED 284/TBD\*  
**NAVSUPINST 4610.31B**  
Air Force Joint Instruction (AFJI) 41-208/TBD\*

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**Preparation of Medical Temperature-Sensitive Products Requiring  
Freeze or Refrigerated (Chill) Environments for Shipment**  
(Supplementation is permitted at all levels)

**A. REFERENCES**

1. Code of Federal Regulations (CFR), Title 49, Transportation (<http://www.gpoaccess.gov/cfr/>).
2. International Air Transport Association Dangerous Goods Regulations (<http://www.iata.org/>).
3. Air Force Inter-service Manual 24-204, Preparing Hazardous Materials for Military Air Shipments (<http://www.e-publishing.af.mil/>).
4. DLAR 4145.21, Preparation of Medical Materiel Requiring Freeze or Chill Environment for Shipment, April 23, 1990.
5. Department of Defense (DoD)/Department of Veterans Affairs (VA) Medical Catalog (<https://dmmonline.dscp.dla.mil/>).
6. Universal Data Repository (UDR) (<https://www.dlis.dla.mil/UDR/>).
7. Defense Transportation Regulation (DTR) 4500.9-R-Part II Cargo Movement ([http://www.transcom.mil/j5/pt/dtr\\_part\\_ii.cfm](http://www.transcom.mil/j5/pt/dtr_part_ii.cfm)).
8. Medical Marking Standard Number 1 (<https://dmmonline.dscp.dla.mil/>).
9. Commercial Item Description A-A-59195 - Container, Thermal, Shipping, for Medical Material Requiring Controlled Temperature Ranges (<https://dmmonline.dscp.dla.mil/>).
10. Compressed Gas Association (CGA) G-6.2, Commodity Specification for Carbon Dioxide (<http://www.cganet.com/>).
11. ASTM International Standard D5486/5486M - Standard Specification for Pressure-Sensitive Tape for Packaging, Box Closure, and Sealing (<http://www.astm.org/>).
12. Armed Services Blood Program - Joint Blood Program Handbook: Army Technical Manual (TM) 8-227-12; Navy Medical Publication 6530 (NAVMED P-6350); Air Force Joint Handbook 44-152 (<http://www.militaryblood.dod.mil/Staff/>).
13. Commercial Item Description (CID) A-A-59195, Container, Thermal, Shipping, for Medical Materiel Requiring Controlled Temperature Ranges (<http://www.dscc.dla.mil/downloads/packaging/>).

\* DLA approval precedes acceptance and directives system validation by these organizations.